REMARKS

Claims 3-20 are pending in the above-referenced application. Claims 3-20 are rejected. More specifically and following the item numbers therein, the Office Action has:

In Item 1, rejected claims 3-20 under 35 USC 103 as being unpatentable over Donovan (US 6,975,319) in view of Aono (US 6,034,691);

In Items 2-6, acknowledged Applicants' previous arguments; and

In Item 7 cited additional references.

Regarding Item 1, Applicants respectfully submit that claims 3-20, as amended, are patentable over Donovan in view of Aono. Claims 10 and 12 are the independent claims. Applicants respectfully submit that the proposed combination fails to teach or suggest the limitations

> for each of the faces to which the selected pixels are mapped, assigning a face id and defining the orientations of the texture axes of the faces in terms of the normal vectors of the cube faces, said texture axes being current texture axes;
> if the neighboring pixels do not have the same face id, changing the current texture axes of at least one of the faces based on assigned face ids to make the current texture axes consistent and continuous between the faces;
> computing an approximation to the derivatives of the texture coordinates based on the current texture axes,

because the proposed combination contemplates two different types of calculations for computing the derivatives of the texture coordinates. Specifically, the Donovan reference explains in reference to FIG. 2 therein that either step 216 or step 212 is needed to compute the LOD. Step 216 computes the LOD using planar LOD computations and step 212 computes the LOD using cubic computations. Donovan '319, Col. 5, line 63-Col. 6, line 8.

Step 216 computes the needed derivatives according to equations #4 or #5,

whereas Step 212 computes the derivatives according to equations #8. The derivatives in the two steps are very different, requiring either a different program or different hardware to carry out the prescribed operations.

Applicants' invention has no such restriction. Applicants' claim 10 recites "computing an approximation to the derivatives of the texture coordinates based on the current texture axes." This computation occurs in the same way regardless of whether the texture axes have been changed. Applicants' invention thus does not use a different calculation for the derivatives depending on whether a planar or cubic condition exists, as described in the Donovan reference. The combination of the Aono reference with the Donovan reference does not change the fact that Donovan uses different computations depending on whether a planar or cubic condition exists. Furthermore, in Aono, if texture coordinates do not exist on the same reflection map (one surface of the cube), then special processing is needed. Aono '691, Col. 8, lines 44-50. In the Aono reference, the special process is a clipping process. See FIG. 5, steps 240 and 250. This clipping process involves the use of a triangular cone as detailed in FIG. 9. '691, Col. 11, lines 13-18. Applicants' invention involves no such clipping process. Therefore, the combination of Donovan and Aono fails to teach or suggest all of the limitations of the present invention as recited in claim 10.

The same arguments apply to independent claim 12.

The Office Action has argued that it would have been obvious to use the normal vectors for each face as described in Aono to implement the LOD calculating techniques described in Donovan. However, Donovan appears to avoid the use of normal vectors for either the planar or cubic calculation. It is not clear how one of skill in the art familiar with the teachings of Aono in this regard would apply those teachings to Donovan because it would not have been clear how the normal vectors of Aono would fit into Donovan's system. Furthermore, when the cube face IDs at the three vertices of the primitive being processed are not identical, Aono resorts to a clipping process, whereas Donovan uses a coordinate transformation to solve the same problem. Again, it would not have been clear how one of skill in the art would combine the teachings of Aono and Donovan in this regard, because the two ways of dealing with the "different face"

problem are so different, even perhaps incompatible. Finally, Applicants respectfully submit that Aono fails to teach or suggest the step of mapping each selected pixel to a cube face based on the magnitude of the normal vector. Aono does not use the normal vectors of the cube faces for this purpose, but instead to obtain IDs that guide the computation of the texture coordinates using reflection vector components. Therefore, Applicants conclude not only that the proposed combination fails to teach or suggest all of the limitations of Applicants' invention, as recited in claim 10 or 12, but also that one of skill in the art at the time of the Applicants' invention would not have made the proposed combination.

Regarding claims 11 and 13, Applicants respectfully submit that the proposed combination fails to teach or suggest the limitations therein at least because the proposed combination fails to teach or suggest the limitations of claims 10 and 12 from which claims 11 and 13, respectively depend. Additionally, claims 11 and 13 fail to teach the limitation "obtaining a continuity adjustment code based on the assigned face ids," recited in each claim, because Donavan has no code based on the assigned face ids.

Regarding claims 3 and 14, Applicants respectfully submit that the proposed combination fails to teach or suggest the limitations therein at least because the proposed combination fails to teach or suggest the limitations of claims 10 and 12 from which claims 3 and 14, respectively depend. Additionally, the proposed combination fails to teach the limitation "wherein the continuity adjustment code is obtained from a table of codes, the table being indexed by the face ids." There is no table in Donovan that contains codes that are indexed by the face ids. Table 1 in Donovan is not such a table. It is switch statement that is accessed by the side parameter, not a code. Therefore, the proposed combination fails to teach or suggest claims 3 and 14.

Regarding claims 4 and 15, Applicants respectfully submit that the proposed combination fails to teach or suggest the limitations therein at least because the proposed combination fails to teach or suggest the limitations of claims 11 and 13 from which claims 4 and 15, respectively depend. Additionally, the proposed combination fails to teach or suggest the limitation "wherein the approximation to the derivative of the texture coordinates is based on the difference between the texture coordinates of the neighboring

pixels." Donovan fails to teach an approximation to the derivative that uses the difference between the texture coordinates. Equations #4 and #5 show that the derivative is computed by taking the average of two different differences. Equations #8 show that the derivative is computed by taking the sum of the squares of the transformed coordinates. Applicants respectfully submit that both of these computations are different from taking the difference between the texture coordinates, as recited herein.

Regarding claims 5 and 16, Applicants respectfully submit that the proposed combination fails to teach or suggest the limitations therein at least because the proposed combination fails to teach or suggest the limitations of claims 4 and 15 from which claims 5 and 16, respectively depend.

Regarding claims 6 and 17, Applicants respectfully submit that the proposed combination fails to teach or suggest the limitations therein at least because the proposed combination fails to teach or suggest the limitations of claims 5 and 16 from which claims 6 and 17, respectively depend.
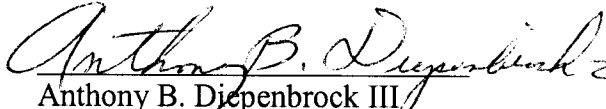
Regarding claims 7 and 18, Applicants respectfully submit that the proposed combination fails to teach or suggest the limitations therein at least because the proposed combination fails to teach or suggest the limitations of claims 11 and 13 from which claims 7 and 18, respectively depend.

Regarding claims 8 and 19, Applicants respectfully submit that the proposed combination fails to teach or suggest the limitations therein at least because the proposed combination fails to teach or suggest the limitations of claims 7 and 18 from which claims 8 and 19, respectively depend.

Regarding claims 9 and 20, Applicants respectfully submit that the proposed combination fails to teach or suggest the limitations therein at least because the proposed combination fails to teach or suggest the limitations of claims 8 and 19 from which claims 9 and 20, respectively depend.

CONCLUSION

Having addressed each and every rejection, Applicants believe that the application is in condition for allowance, which is respectfully requested.
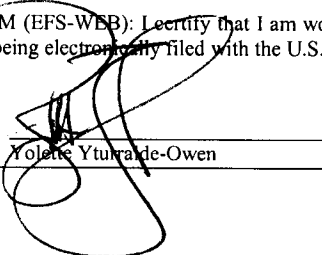
Respectfully submitted,

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